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CHRISTOPHER P. MAIORANA, P.C.  
24840 HARPER SUITE 100  
ST. CLAIR SHORES, MI 48080

EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT PAPER NUMBER

2616

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/021,992

Applicant(s)

JHA, PANKAJ K.

Examiner

Andrew C. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 12-19 is/are rejected.
- 7) ☒ Claim(s) 2-4,9-11 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 12, 6, 13, 7, 14, 8, 16, 17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hama (US 2004/0202171 A1).

Regarding claim 1, Hama discloses the limitation of a router (Fig.2, element “edge router”) comprising: a first port (Fig. 2, element 121, Ethernet line card, page 6 [0072], lines 3 – 4) configured to receive a first frame (page 6, paragraph [0072], lines 4 – 5; cited “for receiving a VLAN packet” as first frame) having ( i ) a source media access control (MAC) address (Fig. 25, element M2, Fig. 24, element M2; cited “MAC SA” as a source media access control (MAC) address, page 3, paragraph [0021], line 6), (ii) a first network layer protocol identification immediately following said source MAC address (Fig. 24, element “type” as first network layer protocol identification) and (iii) a network layer address following said network layer protocol identification ( Fig. 24, element M5; cited “IP header” as network layer address, IP layer is layer 3 which is network layer); a second port (Fig. 2, element 128, “line card”) connectable to a Multi-Protocol Label Switching (MPLS) network (Fig. 2, element 128; cited “ sending the MPLS packet to the MPLS network via a line card 128” as connectable to a Multi-Protocol Label Switching (MPLS) network); and a circuit (Fig. 2, element 123i subrouter; page 6, paragraph[0074], lines 1 – 12) configured to (i) insert an a first

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MPLS label into said first frame while retaining said first network layer 'protocol identification (recited "the VPN label and push label have been found, the subrouter swaping the VPN label and forwarding label for tag to generate an MPLS packet" as insert an a first MPLS label into said first frame; page 7, paragraph [0087], lines 1 – 12 ) and (ii) present said first frame in said MPLS network (page 7, recited "sending this MPLS packet to the MPLS network" as present said first frame in said MPLS network; page 7, paragraph [0084], lines 13 – 14 ).

Regarding claims 5, 12, Hama discloses the limitation of a router according to claimed wherein said circuit is further configured to: transmit a plurality of frames having a plurality of different protocol through a single traffic-engineered path in said MPLS network (recited "utilizing protocols other than IP, such as IPX, FNA and AppleTalk"; page 4, paragraph [0035], lines 2 – 4).

Regarding claims 6, 13, Hama discloses the limitation of a router according to claimed wherein said transmission through said traffic-engineered path is bidirectional (Fig. 18, recited "the sending and receiving frames" as bidirectional, "broadcast frames only be relayed within the group" as traffic-engineered path).

Regarding claims 7, 14, Hama discloses the limitation of a router according to claim 1, wherein the circuit is further configured to: create an MPLS label stack field between a data link layer address field and a network layer protocol identification field in said first frame (page 3, paragraph [0022], lines 1 – 10, element " 1-bit S field); and insert said first MPLS label into said MPLS label stack field (Fig. 24, element "S" as MPLS label stack filed).

Regarding claim 8, Hama discloses the limitation of a method of operation in a Multi-Protocol Label Switching (MPLS) network (Fig. 1) comprising the steps of: (A) receiving a first,

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frame having (i) a source media access control (MAC) address (Fig. 25, element M2, Fig. 24, element M2; cited “MAC SA” as a source media access control (MAC) address, page 3, paragraph [0021], line 6), (ii), a first network layer protocol identification immediately following said source MAC address (Fig. 24, element “type” as first network layer protocol identification) and (iii) a network layer address following said first network layer protocol identification (Fig. 24, element M5; cited “IP header” as network layer address, IP layer is layer 3 which is network layer); (B) inserting an a first MPLS label into said first frame while retaining said first network layer protocol identification (recited “the VPN label and push label have been found, the subrouter swaping the VPN label and forwarding label for tag to generate an MPLS packet” as insert an a first MPLS label into said first frame; page 7, paragraph [0087], lines 1 – 12); and (C) presenting said first frame in said MPLS network (page 7, recited “sending this MPLS packet to the MPLS network” as present said first frame in said MPLS network; page 7, paragraph [0084], lines 13 – 14).

Regarding claim 16, Hama discloses the limitation of a method according to claim 8, wherein said steps (A) through (C) are stored in a storage medium (recited “ forwarding-label memory” as a storage medium; page 7, paragraph [0086], lines 1 – 15) as a software program that is readable and executable by a router to insert said first frame into said MPLS network (page 8, paragraph [0090], lines 1 – 11).

Regarding claim 17, Hama discloses the limitation of a router comprising: means for receiving a first frame (Fig. 2, element 121, Ethernet line card, page 6 [0072], lines 3 – 4) having (i) a source media access control (MAC) address (Fig. 25, element M2, Fig. 24, element M2; cited “MAC SA” as a source media access control (MAC) address, page 3, paragraph [0021], line 6), (ii) a first network layer protocol identification immediately following said source MAC address

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(Fig. 24, element “type” as first network layer protocol identification) and (iii) a network layer address following said first network layer protocol identification (Fig 24, element M5; cited “TP header” as network layer address, IP layer is layer 3 which is network layer); means for inserting a first, Multi-Protocol Label Switching (MPLS) label into said first frame while retaining said first network layer protocol identification (recited “the subrouter swapping the VPN label and forwarding label for tag to generate an MPLS packet” as means to insert an a first MPLS label into said first frame; page 7, paragraph [0087], lines 1 – 12 ); and means for forwarding said frame in an MPLS network (recited “rote decision unit” as means for forwarding said frame in an MPLS network).

Regarding claim 19, Hama discloses the limitation of a method according to claim 8, wherein said first network protocol identifier indicates a network layer protocol of data encapsulated by said first frame (Fig. 3, recited “type” as first network protocol identifier).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hama (US 2004/0202171 A1) in view of Manoharan et al. (US 6952395 B1).

Regarding claim 15, Hama discloses the limitation of a method of operation in a Multi-Protocol Label Switching (MPLS) network (Fig. 1), Hama does not disclose expressly a method according to claimed wherein said MPLS network is defined by a Request For Comment 3031 provided

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by an Internet Engineering Task Force. Manoharan et al. disclose the limitation of expressly a method according to claimed wherein said MPLS network is defined by a Request For Comment 3031 provided by an Internet Engineering Task Force (column 7, lines 18 – 31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hama to include a method according to claimed wherein said MPLS network is defined by a Request For Comment 3031 provided by an Internet Engineering Task Force such as that taught by Manoharan et al. in order to provide “tag switching” enabling the Label switching routers (LSRs) to assign explicit, predetermined paths to various classes of traffic by reference to an entry in “Next Hop Label Forwarding Entry” pre-provisioned look-up table, thereby relieving each LSR of the need to run its own layer 3 routing algorithm (see Manoharan et al., column 7, lines 25 – 32).

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hama (US 2004/0202171 A1) and Manoharan et al. (US 6952395 B1) as applied to claims 1, 5, 12, 6, 13, 7, 14, 8, 16, 17, 19, 15 above, and further in view of Erb et al. (US 2003/0026271 A1).

Regarding claim 18, both Hama and Manoharan et al. fail to disclose a router according to claimed wherein said first frame comprises a Point-to-Point Protocol frame. Erb et al. disclose the limitation of a router according to claimed wherein said first frame comprises a Point-to-Point Protocol frame (page 3, paragraph [0044], line 6, recited when L2 layer used is Point-to-Point Protocol (PPP)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Hama and Manoharan et al. to include a router according to claimed wherein said first frame comprises a Point-to-Point Protocol frame such as that taught by Erb et al. in order to provide MPLS-enabled bridges and an MPLS-enabled router for bridging local protocol data units, and switching non-local protocol data units to the router on respective

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ones of the plurality of label switched paths ( as suggested by Erb et al., see page 1, paragraph [0007]).

***Allowable Subject Matter***

6. Claims 2, 3, 9, 10, 20, 4, 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1 – 20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACL

April 21, 2006

  
RICKY Q. NGO  
SUPERVISORY PATENT EXAMINER